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Case Report

Primary laryngeal tuberculosis: a rare cause of chronic laryngitis

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ABSTRACT

Tuberculosis (TB) is not only a major public health problem of developing countries like India, since its incidence is increasing due to increasing immune-depressive states including HIV, malignancies and cytotoxic chemotherapy. Laryngeal TB occurs usually a secondary to associate with pulmonary disease, and primary form is very rare in immune-competent people. We report a 49-years-old non-smoker, non-diabetic, immunocompetent man presenting with chronic dry cough and hoarseness without any constitutional symptoms, family or contact history of TB. The chest X-ray was normal. Laryngoscopy showed congested larynx without any ulcer or mass and normal vocal cords. Biopsy from aryepiglottic fold was suggestive of TB, but caseation was absent. Diagnosed to be primary laryngeal TB, he responded well to anti-tubercular therapy. Primary laryngeal TB without pulmonary TB can mimick chronic laryngitis. Before anti-tubercular drug use, in the 1950's, it was a common and frequently fatal disease but it's clinical features, age group involved and prognosis has changed over the last few decades. It is more infectious than pulmonary form primarily due to delayed diagnosis. It can mimick a common condition like chronic laryngitis, although different macroscopic lesions are described. Diagnosis needs a high index of suspicion, confirmed by histological examination, as it still can occur occasionally in immunocompetent persons. Response to specific treatment is good after diagnosis.

Keywords: Atypical tuberculosis, Laryngeal tuberculosis, Primary laryngeal tuberculosis

INTRODUCTION

In India, tuberculosis (TB) is major health problem, commonly involving the lung. However, it can affect any organ. With modern chemotherapy, laryngeal TB has become a rare entity. But it was a common manifestation of TB in the early 20th century with a high mortality, and commonly occurring in those with active pulmonary disease. The laryngeal lesions usually presented as multiple ulcers involving the posterior part of the larynx due to pooling of secretions in bed ridden patients. Now it represents only ~1% of all cases of TB[1] and usually secondary to pulmonary TB. It remains the most common ENT manifestation of TB, commonly involves the larynx from pulmonary lesions, but rarely it involves the larynx by a primary affection from inhaled tubercle bacilli.[2]

The natural history of laryngeal TB has changed over the time. The age group of patients being affected by this is on the rise from young adults earlier to elderly people with a male predominance, which is especially marked in patients >50 years of age. Macroscopically, laryngeal TB may mimic laryngeal carcinoma, chronic laryngitis or a laryngeal candidiasis. The diagnosis is often delayed due to a low index of clinical suspicion, and hence, may pose a significant public health risk.[3]

CASE REPORT

A 49-year-old non-smoker, non-diabetic, non-hypertensive, afebrile man presented with insidious onset hoarseness, dry cough and anorexia of 2 months' duration. Before presenting to us, he had ENT consultation twice and his medical records showed that he had a throat swab culture and taken two courses of antibiotics (amoxyclav and azithromycin) along with decongestants, cough linctus and antiseptic gurgle, but his hoarseness and dry cough persisted. A chest

skiagram done 6 weeks before was normal. The fauces, posterior pharyngeal wall and oral cavity appeared normal. HIV serology was negative. He had no contact or family history of TB and his repeat chest skiagram was normal. Laryngo-pharyngoscopy showed congested laryngeal and pharyngeal mucosa. Vocal cord movements were normal during respiration and phonation. arytenoids, aryepiglottic folds, retrocricoid region, and base of the tongue were normal. No pooling of saliva was seen (Figure 1). Esophago-gastro-duodenoscopy was normal. Biopsy from the aryepiglottis reported that "section from laryngeal tissue shows stratified squamous epithelium with subepithelial infiltration with inflammatory cells comprising mainly with lymphocytes and Langerhan's type giant cells suggestive of a granulomatous inflammation due to TB without any evidence of malignancy" (H and E, ×200) (Figure 2). He was started on anti-tubercular therapy (ATT) with rifampicin, ethambutol, pyrazinamide and isoniazid and cough linctus. After 1 month, he has reported significant improvement of hoarseness and coughs; and is continuing ATT.

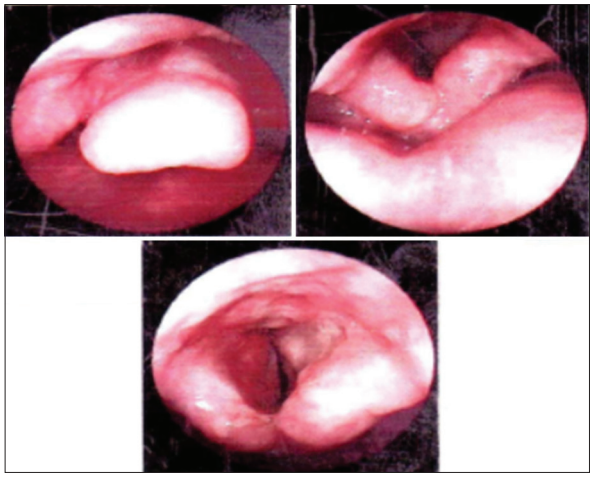

Figure 1: Laryngeal and pharyngeal mucosa are congested. Vocal cord movements are normal during respiration and phonation. Arytenoids, ary-epiglottic fold, cricoids, retrocricoid regions, epiglottis and base of the tongue are normal. No pooling of saliva seen.

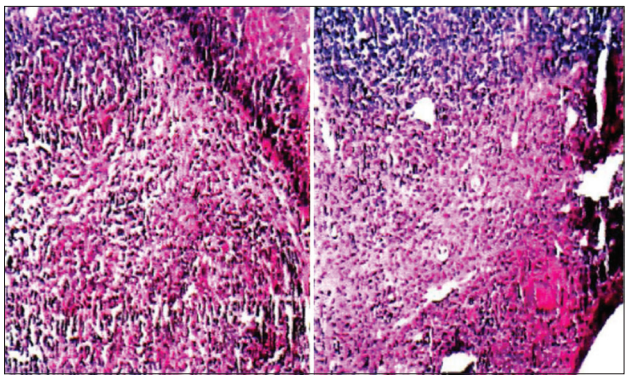

Figure 2: Section showing stratified squamous epithelium with subepithelial infiltration with inflammatory cells lymphocytes and Langerhan's type of giant cells) suggestive of granulomatous lesion suggestive of tuberculosis (H and E, ×200).

DISCUSSION

Laryngeal TB almost disappeared after the 1950s,[3] but, concomitant with an increase in pulmonary forms, may still occur. Earlier it used to occur in about 1/3rd of active cavitary forms of pulmonary TB.[4,5] Now, it is often misdiagnosed or overlooked. Associated pulmonary TB helps in the diagnosis, but primary laryngeal TB can occur even without pulmonary involvement and the characteristics of the lesions tend to be more non-specific.[6]

Our patient had no granuloma, mass, ulcers, friable or fungating lesions in the larynx - reportedly common in laryngeal TB, and also no caseation, no pulmonary involvement, but responded well to ATT. The aryepiglottis is a rare site for tubercular involvement[7] as found in our case making it an unusual site of involvement.

Our patient presented with persistent hoarseness and dry cough and such patients present early, due to the distressing nature of the symptoms. Clinically, hoarseness is the presenting symptom ~85% of patients with laryngeal TB, constitutional symptoms like night sweats, fever and weight loss being rare.[8,9] Associated constitutional symptoms are commonly found in immunocompromised patients, absent in our case. Laryngeal tubercular lesions closely mimic chronic laryngitis[10] as in our case. The true vocal cord is the most commonly involved site followed by the false vocal cord and epiglottis in laryngeal TB[7] but in our case the vocal cords were normal which is rare.

The patient had primary laryngeal TB as the chest X-ray was normal. Even a primary involvement is seen only in 19% of TB cases.[11] Recent studies have shown that laryngeal TB is rarely associated with active pulmonary TB suggesting that the mode of transmission may be due to direct laryngeal seeding of aerosolized bacilli confirming a recent shift in the clinical and pathophysiology of the condition.[2,12,13] It is reported that laryngeal TB occurs with a lesser degree of pulmonary involvement. With non-specific lesions, there is less chance of pulmonary involvement, but with ulcerative and granulomatous lesions there is a greater chance of pulmonary involvement[4] and our patient had simple congestion with fine granularity on endoscopy.

Sputum microscopy is positive in only 20% cases of laryngeal TB. Simply demonstrating the bacilli in a single laryngeal swab smear is not diagnostic for laryngeal TB[14] even in the presence of associated pulmonary lesions. Classically, the diagnosis of laryngeal TB is usually made by identification of caseating granuloma on histopathology. Caseation was absent in our case. But, histopathology may not show tubercular granuloma in spite of it being the commonest granulomatous disease of the larynx. Conclusive etiological evidence is the presence of mycobacteria on culture from the biopsy specimens, but was not done in our case for logistic reasons. Since the response to anti-TB treatment is reported as another important diagnostic criterion,[2] we started ATT based upon the histopathological report only. Laryngeal lesions responded very well to

ATT with complete regression of the lesion and marked improvement in symptoms; which was observed in our case.

CONCLUSION

Overall incidence of TB is now rising in parallel to increases in immune deficiency states, and the sites of involvement may be anywhere. But our case was immunocompetent, had no laryngeal ulcer, growth or polyps making it an unlikely diagnosis in the absence of pulmonary lesions, thereby proving it may not be as rare as is generally considered. Additionally, a high index of suspicion is required since the visual appearance can be indistinguishable from laryngitis without any mass or ulcer. The absence of associated pulmonary TB adds to delay in diagnosis and treatment, posing a public health problem because delayed diagnosis contributes to morbidity, and findings suggest that the laryngeal TB is more infectious than pulmonary TB.[15] It will be prudent to consider TB in the differential diagnosis of any form of even non-specific conditions like chronic laryngitis, especially, which do not respond to usual therapy within a reasonable time.

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